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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.								
10/781,993	02/19/2004	Gracme Huntley	M00A256	5331								
<div>7590      09/21/2007</div> <div>Ira Lee Zebrak The BOC Group, Inc. Legal Services - Intellectual Property 575 Mountain Ave. Murray Hill, NJ 07974</div>			<div>EXAMINER</div> <div>HAMO, PATRICK</div> <table border="1"><thead><tr><th>ART UNIT</th><th>PAPER NUMBER</th></tr></thead><tbody><tr><td>3746</td><td></td></tr></tbody></table> <table border="1"><thead><tr><th>MAIL DATE</th><th>DELIVERY MODE</th></tr></thead><tbody><tr><td>09/21/2007</td><td>PAPER</td></tr></tbody></table>		ART UNIT	PAPER NUMBER	3746		MAIL DATE	DELIVERY MODE	09/21/2007	PAPER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/781,993

Applicant(s)

HUNTLEY, GRAEME

Examiner

Patrick Hamo

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10 and 15-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10 and 15-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This action is in response to amendments filed on July 16, 2007.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-10 and 15-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conrad et al., 7,033,142 in view of Toshiaki, JP 2004-147454.

Conrad discloses a vacuum pump system with an intermediate pump 7 directly connected to a high-vacuum turbomolecular pump 3, 4 (col. 2, ll. 1-3), wherein the turbomolecular pump is used to create a vacuum in a chamber receiver 2 and the intermediate pump is used to deliver gas from the outlet of the turbomolecular pump to another pump unit to deliver to atmosphere (col. 3, ll. 3-9) and it was obvious because of the contact between the intermediate pump and the turbomolecular pump at the outlet of the turbomolecular pump that a vibration in the intermediate pump can be transferred to the turbomolecular pump. Furthermore, Conrad discloses that an alternative system could include a dry pump directly connected to the turbomolecular pump (col. 1, ll. 15-19).

Conrad does not disclose a method of reducing vibration in a pumped system, comprising: measuring a first vibration originating outside the pump; and producing a second vibration in a first pump, the second vibration being in anti-phase with the first vibration; wherein the first vibration is measured at a process chamber and the second vibration is produced by a magnetic bearing in the first pump; further comprising generating a control signal in response to the first vibration; and sending the control signal to a magnetic bearing in the pump to induce a second vibration in the pump, the second vibration being in opposition to the first vibration such that the sum of the first vibration and the second vibration is less than the first vibration; wherein the first vibration is measured at the chamber or the inlet of the pump or on the attaching element or just at a location remote from the backing pump; a control circuit that send the control signal inducing a second vibration.

However, Toshiaki teaches a method of reducing vibration in a pumped system comprising the steps of measuring a first vibration with a vibration or sway detector 27 attached to a flange 37 of the pump (claim 6), generating a control signal in a controller 10, 14 in response and sending the signal to a magnetic bearing 30 of a rotary device, a turbomolecular pump that reduces the pressure in a chamber in a preferred embodiment (Detailed Description, para. [0028-0029]), thereby producing a second vibration, the second vibration being out of phase with the first vibration (fig. 8) so as to negate the undesirable vibration (Detailed Description, para. [0004]).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Conrad with Toshiaki in order to negate

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any undesirable vibration (Detailed Description, para. [0004]), including vibration that may result from outside the pump as taught by Toshiaki, such as the intermediate pump of Conrad.

Furthermore, the combination of Conrad in view of Toshiaki does not explicitly teach the claimed limitations that the vibration is measured at a process chamber or at an inlet of the pump.

However, these claimed limitations constitute a mere rearrangement of parts and fail to patentably distinguish over the prior art because shifting the position would not have substantially modified the operation of the device nor produced any unexpected results. See MPEP §2144.04(6)(c).

### ***Response to Arguments***

Applicant's arguments filed July 16, 2007 have been fully considered but they are not persuasive.

Applicant argues that neither Conrad nor Toshiaki, taken alone or in combination, suggest reducing vibration generated by one pump by producing an anti-phase vibration in another pump. However, as discussed above, Toshiaki teaches simply that the pump generates a signal in response to a vibration detected by a sway sensor on the flange of the pump and producing a second vibration out of phase with this first vibration so as to negate the vibration. While Toshiaki does not teach that the first vibration is produced by a second pump, it does not exclude the plausibility that the vibration is caused by a second pump, as the applicant contends. Therefore, in the combination with Conrad

whereby an intermediate backing pump is in direct contact with a turbomolecular pump similar to that of Toshiaki, it would have been obvious as argued above that the intermediate pump would produce vibrations in the course of normal operation, and that modifying the system of Conrad with the teachings of Toshiaki would improve the overall system. The same argument holds true when instead of claiming a vibration originating from a second pump the vibration is claimed generically as originating outside the pump with the vibration reduction, as the second pump is outside the pump.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

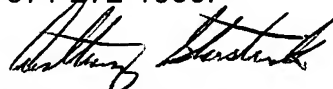
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Hamo whose telephone number is 571-272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on 571-272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PH



Anthony Stashick  
Supervisory Patent Examiner  
Art Unit 3746